PCT WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : G01T 1/178, 7/00

A1

(11) International Publication Number: **WO 99/15912**

(43) International Publication Date: 1 April 1999 (01.04.99)

(21) International Application Number: PCT/EP98/06047

(22) International Filing Date: 22 September 1998 (22.09.98)

(30) Priority Data:
9720371.5 24 September 1997 (24.09.97) GB

(71) Applicant *(for all designated States except US)*: EUROPEAN ATOMIC ENERGY COMMUNITY (EURATOM) [LU/LU]; Commission of the European Communities, Bâtiment Jean–Monnet, Plateau du Kirchberg, L–12930 Luxembourg (LU).

(72) Inventors; and
(75) Inventors/Applicants *(for US only)*: EDWARDS, Robert, Arthur, Henry [GB/IT]; T.P. 800, Joint Research Centre, I–21020 Ispra (IT). PACENTI, Paolo [IT/IT]; Joint Research Centre, I–21020 Ispra (IT).

(74) Agent: BALDOCK, Sharon, Claire; Boult Wade Tennant, 27 Furnival Street, London EC4A 1PQ (GB).

(81) Designated States: CA, JP, US, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).

Published
With international search report.
Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

(54) Title: SELECTIVE MONITORING OF TRITIUM–CONTAINING SPECIES IN A GAS

(57) Abstract

There is disclosed a method and apparatus for selectively monitoring tritium containing species in a gas. The apparatus comprises a hygroscopic scintillator element suitable for selective response to tritiated water vapour and other hydrophilic tritiated species in a gas, which scintillator comprises a solid scintillator material having a layer of hygroscopic material thereon. Measuring means are provided to measure any light emitted from the scintillator element, the amount of which emitted light provides a measure of the tritium containing species in the gas. The method comprises (a) providing a hygroscopic scintillator element as identified above for contact with a gas to be tested; (b) measuring the light emitted from said hygroscopic scintillator using measuring means, the amount of said light emitted from said scintillator element providing a measure of the activity of the tritiated water vapour or said hydrophilic tritiated species in the gas.